

REMARKS

Applicants have amended claim 1 to include the limitations of claim 26. Claim 26 has been accordingly cancelled without prejudice or disclaimer. Applicants have also amended claim 1 to recite that the avian pancreatic polypeptide is SEQ ID NO: 6. Support for this amendment can be found in the specification, for example, in Fig. 2 and the text describing Fig. 2. See also the Response filed on March 13, 2006. Applicants have further corrected an inadvertent typographical error in claim 1.

Applicants have also cancelled claim 27 without prejudice or disclaimer.

New claim 28 has been added, reciting an avian pancreatic polypeptide of SEQ ID NO: 6 modified by substitution of a portion of the avian pancreatic polypeptide with an amino acid sequence selected from SEQ ID NOs: 23, 24, 25, 26, 27, 28, or 29. This new claim is based on currently pending claim 1.

No new matter has been added. Claims 1-5, 12, 13, 19, 23-25, and 28 are now pending for examination. Claims 14-18 and 20-22 have been withdrawn from further consideration. It should be noted that claims 14-18 and 20-22 were withdrawn pursuant to an election of species, and may be eligible for rejoinder. See M.P.E.P. §821.04-§821.04.

Rejections under 35 U.S.C. §112, ¶1

Claims 1-5, 12-13, 19, and 23-27 have been rejected under 35 U.S.C. §112, ¶1, for lack of enablement.

Applicants have amended independent claim 1 to recite that the avian pancreatic polypeptide comprises an amino acid sequence selected from SEQ ID NOs: 23, 24, 25, 26, 27, 28, or 29. The Examiner had noted that the specification is enabling for these sequences. Accordingly, claim 1, as amended, is believed to be allowable. Claims 2-5, 12, and 13, 23-25 each depend from claim 1, and are believed to be allowable for at least the same reasons. However, Applicants do not concede that sequences other than SEQ ID NOs: 23-29 are not enabled by the specification.

With respect to independent claim 19, Applicants note that each of parts (a) through (e) specifically recites SEQ ID NO: 23. As previously discussed, the Examiner has noted that the specification is enabling for at least SEQ ID NO: 23. Thus, it is respectfully requested that the

rejection of claim 19 be withdrawn. However, Applicants do not concede that sequences other than SEQ ID NO: 23 are not also enabled by the specification.

With respect to the binding of SEQ ID NOs: 27, 28, and 29 to Bcl, although specific K_d values were not given in Fig. 4, the description of the identification procedure of these sequences shows that binding of SEQ ID NOs: 27, 28, and 29 to Bcl does occur. See, e.g., page 38, line 25 to page 39, line 12. In particular, each of the sequences shown in Fig. 4 was retained through five rounds of panning. If no binding had occurred, then these sequences would not be expected to be retained for even one round of panning, let alone five. Thus, the specification shows that SEQ ID NOs: 27, 28, and 29 do, in fact, bind to Bcl.

Regarding the location of SEQ ID NOs: 23-29 within SEQ ID NO: 6, Applicants note that claim 1, as amended, recites that the avian pancreatic polypeptide be modified on the alpha helix domain of the polypeptide when the polypeptide is in a tertiary form with these sequences. The alpha helix domain is discussed in detail in the specification, for example, page 7, line 31 to page 8, line 10, and SEQ ID NOs: 23-29 begin at residue 20 within SEQ ID NO: 6 (see Fig. 4).

Thus, for at least the above-mentioned reasons, it is respectfully requested that the rejection of claims 1-5, 12, 13, 19, and 23-27 be withdrawn.

Rejections under 35 U.S.C. §102(b)

Claims 1-5, 12, 13, and 23-25 have been rejected under 35 U.S.C. §102(b), as being anticipated by Chittenden, *et al.*, U.S. Pat. No. 5,656,725 ("Chittenden").

There is no recitation in Chittenden of any of SEQ ID NOs: 23-29, as is recited in independent claim 1, as amended. As has been previously noted by the Applicants, Chittenden appears to be directed to a fragment (SEQ ID NO: 10) of the Bak protein that binds to Bcl-X_L, and does not teach a modified avian pancreatic polypeptide, let alone an avian pancreatic polypeptide comprising an amino acid sequence selected from SEQ ID NOs: 23-29. Thus, it is respectfully requested that the rejection of independent claim 1 and dependent claims 2-5, 12, 13, and 23-25, each of which depends from claim 1, be withdrawn.

Rejections under 35 U.S.C. §103(a)

Claims 1-5, 12, 13 and 23-25 have been rejected under 35 U.S.C. §103(a), as being unpatentable over Zondlo, *et al.*, “Highly Specific DNA Recognition by a Designed Miniature Protein,” *J. Am. Chem. Soc.*, 121:6938-6939 (1999) (“Zondlo”) in view of Sattler, *et al.*, “Structure of Bcl-X_L-Bak Peptide Complex: Recognition Between Regulators of Apoptosis,” *Science*, 275:983-986 (1997) (“Sattler”).

Neither Zondlo nor Sattler disclose or suggest any of SEQ ID NOs: 23-29, nor do these references disclose or suggest modifying avian pancreatic polypeptide by substitution of at least one residue selected from a site on a known protein through which interaction with Bcl2 protein occurs, as is recited in independent claim 1, as amended. Zondlo appears to be directed to the use of avian pancreatic polypeptide as a scaffold for the design of miniature proteins that bind to certain DNA targets with high specificity, but does not disclose or suggest binding to protein targets, let alone binding to Bcl2. Sattler is directed to a Bak protein that interacts with Bcl-X_L, but does not teach or suggest the selection of residues from the Bak protein for protein grafting purposes. Accordingly, it is not seen how the combination of Zondlo and Sattler, to the extent that such a combination could be made (which Applicants do not concede that there would have been a suggestion or motivation to make), would render obvious any of claims 1-5, 12, 13, and 23-25. It is therefore respectfully requested that the rejections of these claims in view of Zondlo and Sattler be withdrawn.


CONCLUSION

In view of the foregoing, it is believed this application is in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this response, that the application is not in condition for allowance, the Examiner is requested to call the undersigned at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge Deposit Account No. 23/2825, under Order No. Y0087.70010US00 from which the undersigned is authorized to draw.

Dated: December 1, 2006

Respectfully submitted,

By _____
Tani Chen, Sc.D.
Registration No.: 52,728
WOLF, GREENFIELD & SACKS, P.C.
Federal Reserve Plaza
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
(617) 646-8000

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